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Suppressing the Zs*

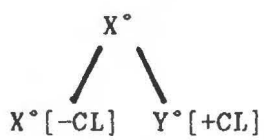
Arnold M. Zwicky
Ohio State University and Stanford University

1. **Theoretical matters.** In the scheme of Nevis (1985), the pretheoretical notion of 'clitic' is replaced by two quite distinct notions, described by different mechanisms within a grammar incorporating a GPSG-style syntax: bound words and phrasal affixes.

1.1. **Bound words.** Bound words (or, more exactly, bound i-forms, since the 'words' involved are not lexemes but inflectional forms of lexemes) are treated in the syntax simply as words representing particular syntactic categories. Their distribution is described just as the distribution of free words is described--by conditions on immediate dominance, feature distribution, and linear precedence. What sets a bound word apart from free words is a nonsyntactic principle of liaison that either permits or requires it to form a word-like unit with some neighboring word (again, more exactly, with some neighboring i-form), the host.

Nevis supposes that liaison is just 'phonological' attachment, but since the lexical phonological shape of an optionally bound word, like the English auxiliary *has*, can depend on whether or not there is liaison, I will assume that host-plus-clitic combinations are in fact morphosyntactic constructs of some sort, with structures like the following:

(1)



Here, X and Y are syntactic categories, X being the category of the host and Y of the clitic.

Some bound words, for instance certain of the i-forms of English auxiliaries, are optionally bound. They have 'weak forms' with a syntactic distribution that is a subset of the syntactic distribution of the corresponding 'strong forms', which are free words. Some bound words, like the Finnish particle clitics *-hAn* etc. treated by Nevis, are obligatorily bound. They have no corresponding 'strong forms'. Nevis argues that the Finnish particle clitics are in fact bound words because they belong to various classes of adverbial free words in Finnish, with which they share their syntactic distribution (differing only in that they must be attached to a host).

Nothing I have said so far would rule out the possibility of obligatorily bound words belonging to a category with no free word members in it. Indeed, this is the analysis I assume is correct for second-position clitics in languages (like Tagalog) that apparently have no class of free words restricted to this position.

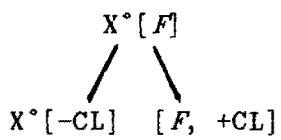
1.2. **Phrasal affixes.** A rather different picture is presented by another group of clitics, exemplified by the English POSS *'s* and the Finnish 'possessive suffixes' as analyzed by Nevis.

The paradigm example of a phrasal affix clitic has a phonological shape that is not available for free words (though the shape is available for inflectional affixes), and there is no class of free words it can be referred to in its syntax; thus it resembles an inflectional affix more than a free word. On the other hand, phrasal affixes are always located outside inflectional affixes, as English POSS is in (2), and unlike inflections they are always realized affixally, never processually (that is, never as gemination, vowel shift, subtraction, or the like). Finally, some phrasal affixes, like some bound words, exhibit 'promiscuous attachment', attachment to i-forms of virtually any syntactic category, as English POSS does in (3). Promiscuous attachment for such phrasal affix clitics is a consequence of the fact that they are located at the edge of some constituent rather than on that constituent's head.

(2) oxen's, schemata's
(3) the person I talked to's theories, the person who's talking's theories

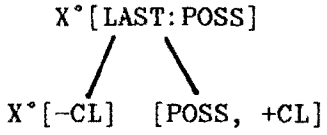
Nevis's proposal for describing a phrasal affix is that the feature *F* it realizes is distributed by syntactic rules. One special rule permits a lexical (0-bar) category with the feature *F* to branch as in (4).

(4)



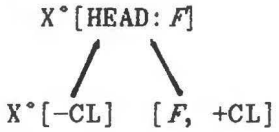
For English POSS, Nevis's GPSG treatment would associate the feature LAST, having the value POSS, with an N^2 modifying an N^1. LAST is a foot feature of a special type; like GPSG foot features in general, the feature must appear on a mother category if it appears on any daughter category, but unlike such foot features as WH, LAST must be restricted to occurrence on no more than one daughter category. Linear precedence rules require that a daughter category with the feature LAST follow all of its sisters, with the result that a lexical category with the feature LAST will in fact be the last word in its N^2. This category will then branch as in (4), giving a structure like (5) for *to's* or *talking's* as in (3), a structure in which POSS belongs to no syntactic category.

(5)



For phrasal affix clitics that are located on the head rather than at the edge of a phrasal constituent, Nevis's framework would have the relevant feature *F* distributed from the phrasal category to the head lexical category via the Head Feature Convention of GPSG. The lexical category will then branch roughly as in (6), which is parallel to (5).[1]

(6)



1.3. **Inflectional affixes.** Nothing in Nevis's framework requires that a feature distributed from a phrasal category to a lexical category must be associated with a branching like the ones in (5) and (6). Without a branching of this sort, such a feature (whether located at an edge or on the head) is simply realized via morphological rules, as an inflection (whether the inflection is realized affixally or processually). That is, in Nevis's scheme there are two entirely independent parameters: necessarily affixal realization (phrasal affix clitics being necessarily affixal, ordinary inflections not so) and edge location, with its accompanying promiscuity of attachment (both phrasal affix clitics and ordinary inflections being locatable in either way).

There are then four potentially distinct situations involving feature distribution, not word distribution: HEAD INFLECTION (the usual configuration), HEAD AFFIXAL-CLITIC (Finnish possessive suffixes, in Nevis's analysis), EDGE AFFIXAL-CLITIC (English possessives, again à la Nevis), and EDGE INFLECTION (a type I haven't discussed here, though in Zwicky (1984) I suggest that it might be exemplified). It can be very tricky indeed to decide whether a given range of data in some language illustrates one of these situations rather than another. Consider, in particular, how to decide between INFLECTION and AFFIXAL-CLITIC (whether it is a HEAD or an EDGE that is involved).

Not much separates inflections from affixal clitics in Nevis's framework. However, (a) an affixal clitic is necessarily affixal, while an inflection is not necessarily so (but most instances of inflection are in fact affixal anyway); and (b) an affixal clitic is located outside all instances of inflection within the morphosyntactic word. Criterion (b) usually turns out to be the crucial one--which is in some ways unfortunate, since there is always a way to treat affixal clitics as inflections in the absence of evidence of type (a): instead of positing a (language-particular) branching rule like (5) or (6), stipulate instead that the affix in question must fill the outermost affix slot, all other affixes having the default characteristic of filling inner slots. For English POSS, the choice is between stipulating in the syntax that the feature POSS conditions a branching as in (5), or stipulating in the morphology that POSS fills the second of two slots for inflectional affixes.

2. **Facts about POSS.** I will now argue that of the three possible treatments of English POSS within Nevis's scheme--as a bound word clitic, as an (edge-located) phrasal affix clitic, or as an (edge-located) inflectional affix--the last is the best. One consequence of this position is that the very existence of phrasal affix clitics, and of syntactic branchings like those in (5) and (6), is called into doubt, since English POSS is in fact the standard example of a phrasal affix clitic.

My argumentation will depend on claims about principles that describe the allomorphy of words, in particular on claims that certain sorts of morphological or morphosyntactic rules do not exist. Such negative claims cannot themselves be demonstrated (though they can be made plausible); the reader should understand at the outset that my conclusions are tentative.

2.1. **PL+POSS.** The basic facts that are relevant to the issue are very familiar.[2] As illustrated in (7b), parallel to the singulars in (7a), PL and POSS can combine, but when the shape of PL is the (regular) sibilant suffix, as in (7c), POSS is suppressed. The examples in (7) involve both the prenominal possessive construction and the doubled possessive construction of *a friend of mine*, in which POSS co-occurs with the prepositional possessive in *of*.

(7) a. my oldest kid's ideas, a friend of my oldest kid's
b. the children's ideas, a friend of the children's
c. the two kids'/*kids's ideas, a friend of the two kids'/*kids's

The suppression is not phonologically conditioned, as is shown by the examples in (8), where the nouns to which POSS attaches end in one of the sibilants /z/ or /s/ but POSS is not suppressed. These examples involve both ther prenominal possessive and the locational possessive of *at/to/near Kim's* 'at/to/near Kim's place'.

(8) a. the fuzz's old cars, at Buzz's
b. the bus's doors, at Cass's
c. the terrace's tiling, at Thomas's

POSS is suppressed no matter which of the three allomorphs of the regular PL occurs on its host:

(9) a. the dogs'/*dogs's kennel
b. the cats'/*cats's favorite places
c. the crocuses'/*crocuses's bright blossoms

And it is suppressed whether its host is the head noun of the NP, as in (7) and (9), or just a noun that happens to end that NP, as in (10b) and (11b).

(10) a. anyone who likes children's ideas
b. anyone who likes kids'/*kids's ideas

(11) a. people attacked by Katz's reactions to him
b. people attacked by cats'/*cats's reactions to them

2.2. **Z+POSS.** POSS is also suppressed in the presence of other Z affixes (those with the same allomorphy as PL). The examples in (12) illustrate suppression in the presence of the verbal suffix PRES, while those in (13) illustrate suppression in the presence of another POSS; POSS in a prenominal possessive is suppressed by POSS in a locational possessive in (13a), by POSS in a doubled possessive in (13b).

(12) a. people who hurry's ideas
b. people who are hurrying's ideas
c. everyone who hurried's ideas
d. anyone who hurries'/*hurries's ideas

(13) a. everyone at Harry's/*Harry's's ideas
b. a friend of my children's/*children's's ideas

2.3. **Multiple suppression.** In fact, any number of instances of POSS can be suppressed. The construction in (14) 'ought to' have two instances of POSS, one for the doubled possessive and another for the prenominal possessive modifying *ideas*, but both are suppressed by PL on *kids*. And the construction in (15) 'ought to' have three instances of POSS, one for the locational possessive, a second for the doubled possessive following *acquaintance*, and a third for the prenominal possessive modifying *crazy ideas*, but all are suppressed by PL on *Smiths*.

(14) a friend of my two kids'/*kids's/*kids's's ideas

(15) an acquaintance of the people
at the Smiths'/*Smiths's/*Smiths's's/*Smiths's's's crazy ideas

3. **Formative problems.** The data in 2.1 through 2.3 present problems for any analysis that treats POSS as a syntactic formative, that is, as a constituent licensed by syntactic (rather than morphological) rules. In both a bound word treatment of POSS and a phrasal affix treatment, POSS is in fact a formative, so that the data speak against both types of analyses.

To see what the issue is, observe that a formative POSS (like all other formatives) must have a lexical entry, and that its lexical entry must include a phonological representation or representations for POSS. Assuming that the lexical phonological representation of the Z suffixes PL and PRES is /z/, what we should like to say about the allomorphy of POSS is sketched in (16). The intended function of the UNLESS clause in (16) is to block the assignment of any phonological representation to POSS in the circumstances specified in the clause.

(16) POSS has the lexical phonological representation /z/, UNLESS its host ends in a morpheme /z/.

There are at least two problems here. The first is that (16) takes account not merely of the phonological shape and/or the morphosyntactic features of the host, but of the specific morphological composition of the host (including phonological properties of one of its constituent morphemes). Lexical phonological shape can depend on properties of adjacent words--in the model of Zwicky (1986) such a dependence would be expressed in a morphosyntactic subcomponent of 'shape conditions'--but so far as I know conditions of this sort are blind to the internal morphological composition of these adjacent words.

Things are not improved if the lexical phonological representation of POSS is just /z/, in which case there must be a rule deleting POSS /z/ immediately after a word ending in a morpheme /z/. I am not

convinced that there are any good examples of rules deleting specific formatives (despite the title of Zwicky and Pullum (1983)), and so far as I know, rules of external sandhi affecting word W are blind to the internal morphological composition of words adjacent to W (though not, of course, to their phonological properties and morphosyntactic features).

A second problem with (16) is the UNLESS clause itself. A contextual condition on the insertion of a particular lexical item should predict whether or not the resulting configuration is acceptable, not whether or not the item has a nonzero realization. For example, the insertion of the strong form *le* for the masculine definite article in French is permitted UNLESS the following word begins with a vowel. It does not follow from this condition that that 'the man' has a suppressed definite article: *homme*. What does follow is that *le homme is unacceptable. This is not at all the intended effect of the UNLESS clause in (16).

4. **Success with inflection.** Now I consider the treatment of POSS as a morphosyntactic feature, distributed by syntactic rules but realized as a suffix by the same sort of (morphological) rule appropriate for the standard examples of inflectional suffixes--a realization rule in the Zwicky (1985) framework for inflectional morphology.

In this framework, realization rules are distinguished from the operations associated with them (suffixation of specified material, reduplication of initial CV, etc.). A single realization rule might be associated with two or more operations (one rule realizing PL on German nouns is associated with an umlaut operation and also with the suffixation of *-er*), and the same operation might be associated with two or more realization rules (in English, suffixation of /z/ is associated with a rule realizing PL and with one realizing PRES).

Moreover, there can be conditions on a realization rule or on one of its operations, and the consequence of an unsatisfied condition will be different in the two situations: an unsatisfied condition on the rule results in unacceptability, as above, but an unsatisfied condition on the operation results in failure of the operation, which is to say, no effect. For example, at least two rules realizing PL in German involve the operation in (17); when the condition in the UNLESS clause obtains, the operation doesn't apply, and no suffix is attached, so that the plural of *Flicken* 'patch' is *Flicken*.

(17) Suffix /ə/ UNLESS the base ends in /ə/ followed by a sonorant consonant.

The ability of realization rules to take account of the internal structure of the bases they operate on is considerable, though perhaps limited by metaconditions like strict cyclicity. In any event, a realization rule like the one in (18) violates no metacondition that I know of.

(18) In the context of [BAR:0], [POSS] is realized by operation (19).

(19) Suffix /z/ in slot 2 UNLESS there is a /z/ in slot 1.[3]

5. **POSS suppressing POSS.** The morphological analysis I have sketched in (18) and (19) accounts for POSS suppressing POSS, as in (13)-(15), not via the UNLESS clause in (19) but rather via the stipulation that the suffix fills slot 2. The effect of multiple instances of POSS would only be to require several times that this slot be filled with /z/.

But in fact the syntactic part of the (edge-located) inflection treatment would by itself have the effect of POSS suppressing POSS. Consider what the syntax would have to say about an example like (15). The NP node dominating *the Smiths* will have the feature [LAST:POSS], as an instance of a locational possessive. The NP node dominating *the people at the Smiths* will have the feature [LAST:POSS], as an instance of a doubled possessive. And the NP node dominating *an acquaintance of the people at the Smiths* will have the feature [LAST:POSS], as an instance of a prenominal possessive. The Foot Feature Principle, the special restriction on the feature-valued feature LAST, and linear precedence conditions for LAST will together require that the word *Smiths* have the feature [POSS]--because it is the last word of *the Smiths* and because it is the last word of *the people at the Smiths* and because it is the last word of *an acquaintance of the people at the Smiths*. The single feature [POSS] satisfies all three requirements.

Treating POSS edge-inflectionally in a GPSG framework thus requires that POSS suppress POSS. To get any other outcome for an edge-located inflection we would somehow have to distinguish different 'sources' for POSS; at best this would represent a considerable complication of the feature system, and at worst it would threaten to subvert the context-free character of a GPSG syntax.

Notes

*This is the version of 13 May 1986.

[1]I am glossing over a number of details here. Current versions of GPSG do not treat HEAD as a category-valued feature, as Nevis and I treat LAST, so that (5) and (6) would not be fully parallel.

[2]A critical summary of much of the literature on PL+POSS is provided in Zwicky (1975:165-75). Data like those in 2.2 are cited by Stemberger (1981:sec. 2.11).

[3]This analysis amounts to a stipulation that suppression of POSS occurs in the contexts described in (19). It does not derive this instance of suppression from a more general principle, as Stemberger (1981) attempts to do in his treatment of the POSS and related facts as instances of 'vacuous rule application'.

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